

Design Assumptions for  
Nebraska Base Drawing NE100-30-004  
Anti-Vortex Plate and Hood Inlet for  
15", 18", 21", 24", 30" & 36" Diameter Pipe

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Revised: 10/04 Replaces: 5001-6

**Anti-Vortex Plate and Hood Inlet for 15", 18", 21", 24", 30" & 36" Dia. Pipe**

The pipe gage is determined by criteria contained in Table 3, FOTG, Pond 378.

Coating requirements criteria is contained in FOTG Pond (378) Standard.

Corrosion control design procedures contained in EFH NB 6-34a-h.

All pipe lengths and coupling bands shall be watertight. Installations of this type may cause negative pressures within the pipe so water tightness is critical.

If the PI of the soil in the embankment is less than 15, the inlet area will be armor coated or have a concrete apron.

This structural component does not allow drawdown of the permanent pool.

When a Nebraska Department of Natural Resources (DNR) Permit is required to construct the project, consult with an engineer.

Instructions for  
Nebraska Base Drawing NE100-30-004  
Anti-Vortex Plate and Hood Inlet for  
15", 18", 21", 24", 30" & 36" Diameter Pipe

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Fill in the following data fields to automatically fill in the necessary data fields on the drawing.

**Title block**

Title line(s)

Subtitle line

County, State

Sheet number                      of

**Who / When**

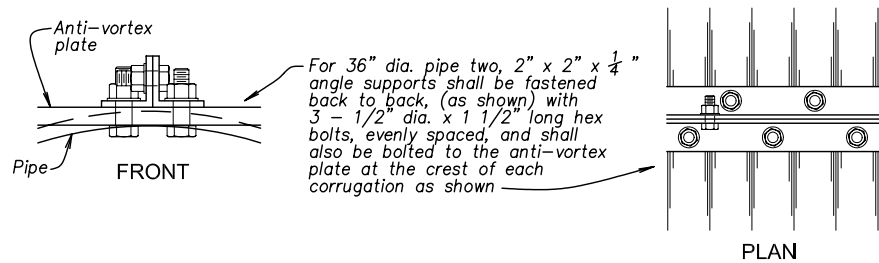
Designed

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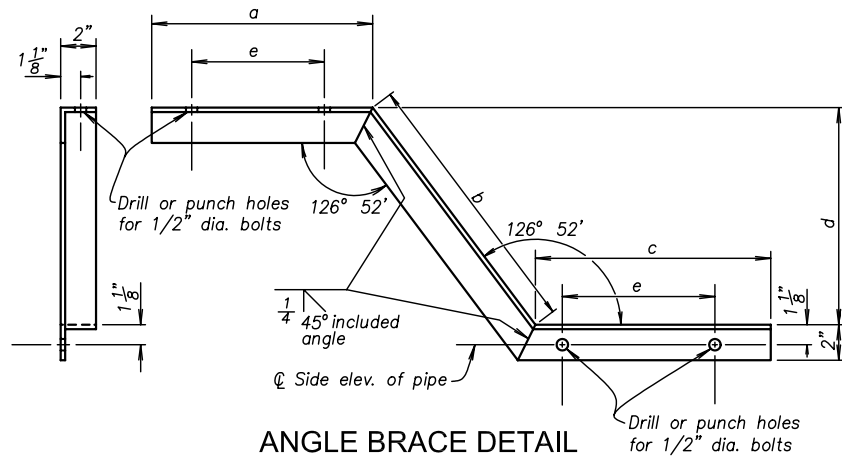
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**Enter directly on drawing**

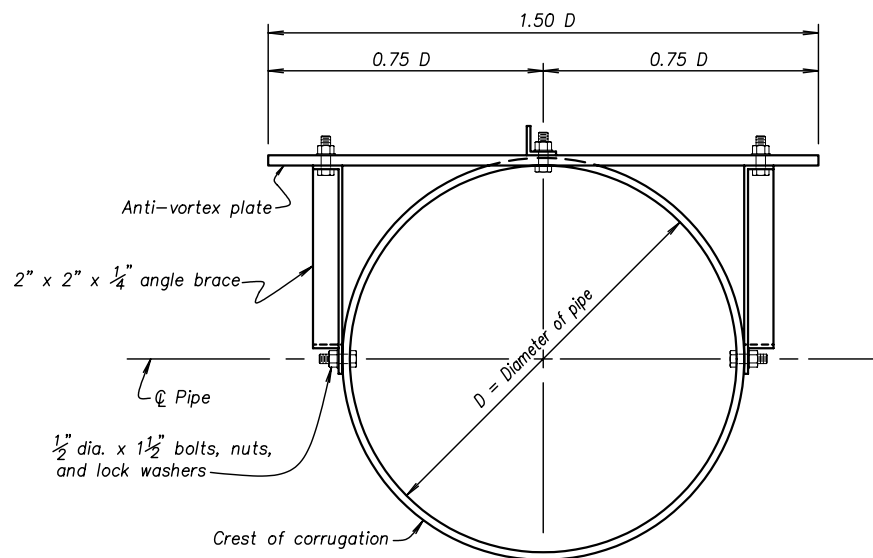
Left click on yellow boxes on drawing to mark with X as required.  
Left click blue data fields to enter required information.



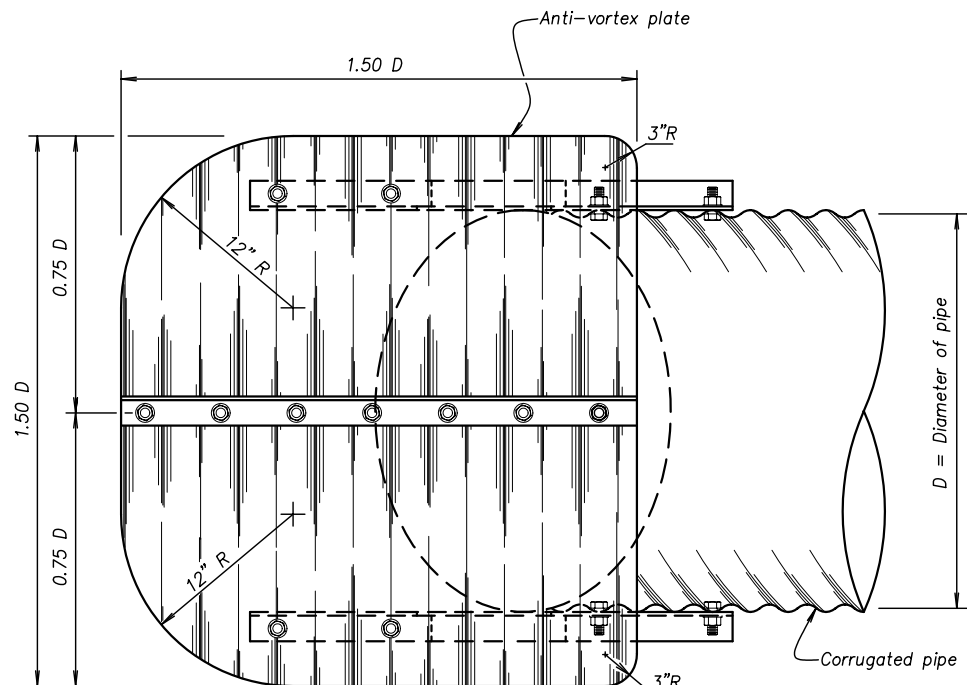
DETAIL FOR 36" DIA. PIPE ONLY



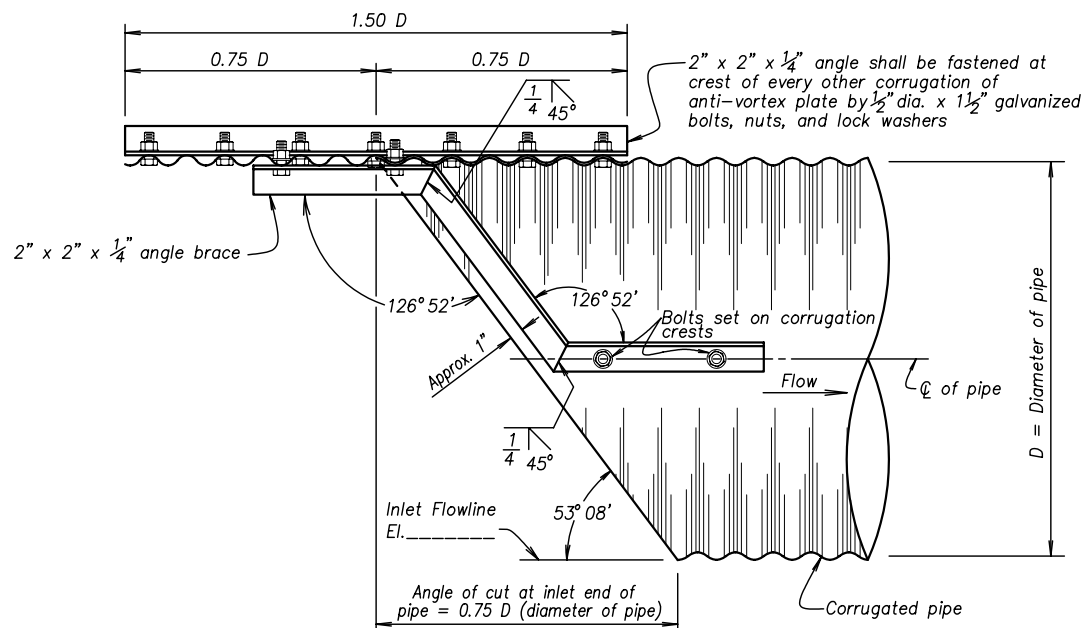
ANGLE BRACE DETAIL



FRONT ELEVATION

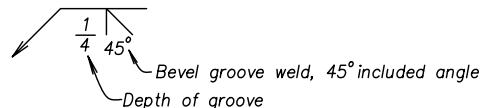


PLAN



RIGHT ELEVATION

WELD SYMBOLS



NOTE:  
ALL WELDS AND HEAT AFFECTED AREAS TO BE TREATED IN ACCORDANCE WITH SPECIFICATIONS.  
MATERIALS NOT COATED OR GALVANIZED SHALL BE PAINTED ACCORDING TO PAINT SYSTEM "C" OF PAINT SPECIFICATIONS.

TABLE OF QUANTITIES MATERIAL LIST & WEIGHTS FOR ANTI-VORTEX PLATE

PIPE DIA. (INCHES)	PLATE GAGE	PLATE SIZE (INCHES)	2" x 2" x 1/4" STEEL ANGLE BRACES (ONE RIGHT AND ONE LEFT) (INCHES)					NO. REQ'D	2" x 2" x 1/4" STEEL ANGLE SUPPORT (FEET & INCHES)	NO. REQ'D.	1/2" x 1 1/2" STEEL MACHINE BOLT WITH NUT AND WASHER NO. REQ'D.	TOTAL WEIGHT (LBS.)
			a	b	c	d	e					
15	16	22 1/2 x 22 1/2	8	7 7/8	8	6 3/8	5 1/3	2	1' - 11 1/2"	1	12	30
18	16	27 x 27	10	9	9	7 7/8	5 1/3	2	2' - 4"	1	13	39
21	16	31 1/2 x 31 1/2	10	11 7/8	9	9 1/2	5 1/3	2	2' - 8 1/2"	1	14	47
24	14	36 x 36	13	13 3/4	12	11 1/4	8	2	3' - 1"	1	15	65
30	14	45 x 45	13	17 3/8	12	13 7/8	8	2	3' - 10"	1	16	88
36	12	54 x 54	13	21 1/8	12	17	8	2	4' - 7"	2	31	163

REQUIREMENT TABLE

X IN BOX INDICATES THE REQUIREMENTS THAT APPLY TO STRUCTURE

INDICATES - NOT APPLICABLE

GA. " x " ANTI-VORTEX PLATE AND HOOD INLET FOR

DIA., GA. PIPE WITH THE FOLLOWING PIPE REQUIREMENTS:

PIPE CLASSIFICATION

TYPE I FULL CIRCULAR CROSS-SECTION FABRICATED WITH:

ANNULAR CORRUGATIONS

CLOSE RIVETED

 OR 

STANDARD RIVETED

HELICAL CORRUGATIONS

CORRUGATION REQUIREMENTS

NOMINAL SIZE (INCH)

1 1/2 x 1/4 (AVAILABLE ONLY IN HELICALLY CORRUGATED PIPE)

2 2/3 x 1/2

3 x 1

5 x 1

COATINGS – ZINC COATED STEEL

FULLY BITUMINOUS COATED, TYPE A-1

ARAMID FIBER COMPOSITE, BITUMINOUS COATED

POLYMER PRECOATED, GRADE 10/10

NONE REQUIRED

NOTE:

THE FOLLOWING DESIGNATIONS FOR PIPE CLASSIFICATIONS, CORRUGATIONS AND COATINGS WHEN REFERRED TO ON THE DRAWINGS ARE IN ACCORDANCE WITH CURRENT ASTM'S:

- A760 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, METALLIC-COATED FOR SEWERS AND DRAINS.
- A761 STANDARD SPECIFICATION FOR CORRUGATED STEEL STRUCTURAL PLATE, ZINC-COATED, FOR FIELD BOLTED PIPE, PIPE ARCHES, AND ARCHES.
- A762 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, POLYMER PRECOATED FOR SEWERS AND DRAINS.
- A849 STANDARD SPECIFICATION FOR POST-APPLIED COATINGS, PAVINGS, AND LININGS FOR CORRUGATED STEEL SEWER AND DRAINAGE PIPE.
- A885 STANDARD SPECIFICATION FOR STEEL SHEET, ZINC AND ARAMID FIBER COMPOSITE-COATED FOR CORRUGATED STEEL SEWER, CULVERT AND UNDERDRAIN PIPE.

FABRICATION AND INSTALLATION NOTES:

- WHEN MORE THAN ONE COATING IS CHECKED IN THE COLUMN BOXES EACH TYPE IS ACCEPTABLE BUT ONLY ONE TYPE OF COATING SHALL BE USED IN EACH INSTALLATION.
- ALL BOLTS, NUTS AND LOCK WASHERS TO BE GALVANIZED.
- ALL ANGLES AND SHEETS TO BE SECURELY BOLTED, AND/OR WELDED AS SHOWN ON THE DRAWING IN ACCORDANCE WITH SPECIFICATIONS.
- CORRUGATED OR SMOOTH METAL SHEETS MAY BE USED TO FABRICATE ANTI-VORTEX PLATE. WHEN MORE THAN ONE SHEET IS USED, THE SEAMS SHALL BE JOINED BY A CONTINUOUS WELD.
- ALL WELDS AND HEAT AFFECTED AREAS ON GALVANIZED METAL SHALL BE TREATED ACCORDING TO SPECIFICATIONS.
- MATERIAL NOT GALVANIZED SHALL BE PAINTED ACCORDING TO PAINT SYSTEM "C" OF PAINT SPECIFICATIONS.
- ALL COMPONENT PARTS OF THE ANTI-VORTEX PLATE SHALL BE COATED THE SAME AS REQUIRED FOR THE PIPE.
- ALL SEAMS CUT, DUE TO FABRICATING IN HELICAL PIPE, SHALL BE WELDED FOR A LENGTH OF 1" FROM THE EDGE OF THE CUT AND TREATED ACCORDING TO SPECIFICATIONS.

ANTI-VORTEX PLATE AND PIPE HOOD INLET  
FOR 15",18",21",24",30" & 36" DIA. PIPE